ABSTRACT OF THE DISCLOSURE

An efficient method for solving a model predictive control problem is described. A large sparse matrix equation is formed based upon the model predictive control problem. The square root of H, Hr, is then formed directly, without first forming H. A square root (LSMroot) of a large sparse matrix of the large sparse matrix equation is then formed using Hr in each of a plurality of iterations of a quadratic programming solver, without first forming the large sparse matrix and without recalculating Hr in each of the plurality of iterations. The solution of the large sparse matrix equation is completed based upon LSMroot.